Project Title:

Bubble Teahouse Management System

In the fast-paced world of food and beverage, efficient management is the key to success. For bubble teahouse owners, delivering a delightful customer experience while effectively handling operations can be quite a juggling act. That is where the Bubble Teahouse Management System steps in, revolutionizing the way bubble tea businesses operate. The system streamlines shop operations by automating inventory tracking and sales management. Additionally, it enhances customer service through order customization and loyalty program management.

Project Scope:

Main Features:

- Streamlined Order Management: this system allows you to efficiently process orders, whether they are for in-store consumption, takeout, or delivery. With a user-friendly interface, the staff can input orders swiftly, reducing customer wait time and ensuring that every bubble tea is served at its freshest.
- Services: In this feature customers will be able to browse the menu, place orders and there will also be detailed information about the order cart.
- Inventory Control: Precise control over inventory is essential to running a successful bubble teahouse. The system keeps track of the ingredients, monitors stock levels, and even sends alerts when it is time to reorder.
- Sales Data: the system provides real-time sales data and generates reports to help you make informed decisions. The system collects and stores customer preferences and purchase history.
- User-Friendly Interface: the intuitive interface ensures that staff and management alike can navigate the system with ease. No extensive training is required; your team will adapt quickly and efficiently.
- Contact Us: This feature will store all the information about the teahouse such as phone number, email address and location. In the location we will also include a map that will help customers with directions.

- Marketing: This feature will redirect the customer to the social media page of the business that includes Instagram and Facebook.

End users

- Teahouse owner, employees and customers are the primary end-users of the teahouse management system.
- Teahouse owner will use the system to track the inventory and monitor sales data. The system will help the owner to manage the daily operations of the teahouse.
- Teahouse employees will use the system to process orders.
- Customers will use the system to browse the menu and place orders.

Integration of the End users with the project (user stories)

- As a teahouse owner, I would like to manage the operation more effectively and efficiently. I want to be able to manage my inventory and generate reports.
- As a teahouse employee, I want to serve my customers more effectively and efficiently. With sales data and customers' feedback at hand, I can get more organized and ready to serve.
- As a customer, I want to be able to easily place orders. I do not want to wait in long lines, especially when tired and exhausted after a long day at work.

A teahouse management system will cover following areas:

- Streamlined Order Management: this system allows employees to efficiently process orders. With a user-friendly interface, the staff can input orders swiftly.
- Services: this system allows customers to browse the menu, place orders and view the order cart.
- Inventory Control: this system keeps track of the ingredients, monitors stock levels, and even sends alerts when it is time to reorder.

- Sales Data: this system provides real-time sales data and generates reports. The system also collects and stores customer preferences and purchase history.
- Marketing: this system can also redirect the customer to the social media page of the business that includes Instagram and Facebook.

Project Users, Actors, Vendors, Actuators

1. **Project users/Beneficiaries**

- Teahouse owner: the primary user of the project is the teahouse owner who needs to manage various aspects of their business, including inventory, sales management, and marketing.

2. **Actors/Third-party Companies**

- Software development companies: Software development companies can provide expertise and support for developing the project, as well as providing software tools, frameworks, and libraries.
- Marketing agencies: Marketing agencies can use the project to create and manage marketing campaigns for the teahouse, and benefit from the data generated by the system.
- Cloud providers: Cloud providers can offer cloud infrastructure and services for hosting and deploying the project.

3. **Vendors**

- Hardware vendors: Hardware vendors can provide equipment and devices necessary to run the project, such as servers, routers, and switches.
- Software vendors: Software vendors can provide software components that integrate with the project, such as database management systems, content management systems, and customer relationship management software.

4. **Actuators**

- Servers: The servers are responsible for running the software components of the project and managing data.

- Databases: The databases store data related to appointments, inventory, customer information, and other relevant data.
- APIs: The APIs enable communication between the various components of the project, such as the front-end interface and the back-end server.

Project Properties

- Functionality: The system should have the necessary functionality to manage various aspects of the teahouse business, including inventory tracking and reporting.
- Usability: The system should be user-friendly and easy to navigate for the teahouse owner, employees, and customers.
- Security: The system should be secure and protect sensitive data, including financial data and inventory data.
- Scalability: The system should be scalable and able to handle an increasing number of users and data as the business grows.
- Performance: The system should be fast and responsive.
- Integration: The system should be able to integrate with third-party services and tools, such as marketing platforms, and inventory management systems.
- Customization: The system should be customizable to meet the unique needs of different teahouses, including branding, pricing, and service offering.
- Accessibility: The system should be accessible to users.
- Maintenance: The system should be easy to maintain and update, with regular backups and security patches.
- Cost-effectiveness: The system should be cost-effective for teahouse owners, with reasonable pricing models and transparent billing practices.

Here are some platforms and software applications that could be used when developing a teahouse management system:

- Front-end Framework: Windows Forms
- Back-end Framework: C# with .NET Framework 4.7.2
- Database Management System: PostgreSQL

Plan Details

Week 1-2: Front-end development

- Develop the front-end user interface using the chosen framework (Windows Forms).
- Focus on creating a responsive design and a user-friendly interface.
- Design and create the main screen and navigation elements.

Week 3-4: Front-end development

- Implement all the key features of the teahouse management system, including:
    - Inventory management
    - Customer management
    - Services management
    - Feedback forms
    - Contact us functionality

Week 5-6: Back-end development

- Develop the back-end server-side logic and API using C#.
- Integrate with the front-end interface.
- Implement user authentication and authorization functionality.
- Set up the necessary data storage and retrieval methods, including integration with PostgreSQL.

Week 7-8: Testing, Debugging and Deployment

- Perform integration testing of the entire system including front-end and back-end components.
- Identify and address any issues or bugs discovered during testing.
- Perform a final round of testing in a production-like environment.
- Deploy the teahouse management system to production, making it accessible to users.